

U S E Y O U R I M A G I N A T I O N ™

Blue Book

EXAMINATION BOOK

Box No. _____

NAME Belmark Inc. - Plant 3
SUBJECT 633 Heritage Road
CLASS De Pere, Brown County, WI
SECTION _____
INSTRUCTOR _____
DATE 6/22/2016

8.5" x 7" 8 LEAVES | 16 PAGES

ROARING SPRING®  PAPER PRODUCTS
ROARING SPRING, PA 16673

Pre-Inspection Notes

Have a Part 7D permit

Flexographic Printing facility

Flexo Presses -

VOC limit: 25% or less VOC in ink; 75% or more water

ink as applied: 60% nonvolatile (less water)

or

reduce VOC emissions by 60% - oxidation units

RTO

SDS for solvents and inks

Arrived at 1:15pm

Presented credentials to Jeff Calaway, operations manager
gave CBI warning to Jeff Calaway
operate 24/6 - printing 24/5 - finishing

John Ambrosius - Plant Engineer (laminating and
Nathan Treague - Regulatory engineer sliting)

environmental manager Gary Tramberg - out today

Consultant - Foth - Cheryl

Jim Wagner - EHS specialist - main contact

205 employees - hourly + salary

always been Belmark

facility built in ~~2003~~ early 2000s

Central support w/ other plants

Other plants: labels, pouches; folding cartons

print laminate and slit - neighboring facility
turns them into pouches

Jessie Milhans - pre-press manager

adhesives - 100% solids - no VOCs

↳ use 1 adhesive

1 reverse print ink system

customer names and products are CBI

raw materials trucked in - no piping

rolls of film - clear, white, metallic (thin Al layer)

1m wide x 24in diameter

inks received in stainless steel totes or 55 gal

drums or 5 gal pails

solvents received in 8,000 gallon tank pumped

in from truck

85% n-propyl alcohol 15% n-propyl acetate

- purchased pre-blended

IT SDS of solvent - dilution ink

each press auto viscosity control

- automatically adds solvent

- monitor overall usage

- inline viscosity probe - several times

per minute

defect rate 1.3% for year

throughput:

average job ~ 2 hours

80 min/hour of actually operating

11 presses total

8 colors - 1 all vented to RTD

10 colors - 5 capture tested on

9 colors - 5 presses

every 2 years - destruction testing on RTD

monitor duct pressure

dumper inspections

RTD records temp

presses and RTD interlocked

dumper override - interlocked

temp gas
dryers: 150-195
°F

temp electric
dryers: 250°F
at metal

gas dryers - 6 presses - nat. gas air: 150-195%

Once reach temp - recirculate air and

start presses

ink coverage
dictates temp
to some
extent

electric heat - 5 presses - blower system
- low pressure

Q UV curing units on 1 press - glossy finish

↳ 100% solids: varnish

print on 1 web - may print on both sides

laminating not connected to RTO

wound up into roll after curing

roll goes to finishing area

then laminated to a standby web

after laminating → to slitter

Slice into smaller rolls

Ship out on rolls to customer 70%

30% ^{50%} goes next door to become pouches

Other 50% out sourced

100% of materials to pouch come from this facility

Current bottleneck - presses

Last year installed additional slitters

before slitters were bottleneck

most presses 3 or 4 yrs old

oldest press installed April 2010

all next gen presses

Central impression

CI presses - longer running short jobs

inline flexo presses - short jobs

Capture to RTD about 99% for CI presses

Print w/ dots

auto washup cycles

storage tank - dirty solvent

storage tank - cleanup solvent

distill dirty solvent - PRI

reuse cleanup solvent

~~ET-SDS~~ cleanup solvent - analysis

- did one a month ago

waste from distill - distill bottoms or sludge

~ 35% efficiency

15% sludge - pumped to holding tank

3000 gallon tank

- material handled as haz waste

analysis - % solids - do the ^{analysis} annually

→ empty out about 4 times/year

Tour: 2:30 PM

Can smell solvent

C1 drum 83" in diameter -
printing decks around drum

make printing plates

thermal plate processing

laser images carbon plate

then its abrased

then thermal

Mixinks on-site

not gas dryers

also have between color dryers - small
500 ft/min - 1100 ft/min - speed
dictated by design average 850-900
ft/min

In-line Flexo presses

no air recirculation

LEL meter - shuts down press if reading too high

building under negative pressure

Virgin 85/15 solvent

double wall tank - welded roof

vented to atmosphere when filled

distilled bottoms tank

RTO - square stack

Inlet temp 117°F

Oxidation temp: 1579°F

3 hr rolling avg: 1605°F

outlet temp 202°F

gas valve 49% open

switches gas flow every 180 - 185 seconds

1) monitor temp daily

1) record outages and verify that pressure went down

designed 60,000 SCFM

monitor airflow

shut ~~off~~ RTO down when airflow too high

- automatic - integrated

Laminating - adhesive added

100% solids - solventless adhesive

706 ft/min currently

300 ft/min average

put up to 3 layers of laminate

have roughly 3-4 days supply - storage
most raw materials - pass through facility

in less than 30 days

ink dispensing area below

ink room - smells heavily of VOCs

9 hoses/outlets

ended tour 3:30 pm

Cheryl Pham - Foth arrived at end of tour

SDS ethyl acetate

SDS top 10 inks

May 2016 ^{dairy} temp report - RTO

Stack tests - last 2 stack tests RTO

VOC destruction

2 CL and 2 in-line (most recent) capture

efficiency test

2015 VOC emission calcs

w/ equations

due date - next week Wed

ended at 3:45pm